The Infrared Spectra and Structure of Aromatic Organolithium Compounds SOV/20-128-4-26/65

1045-1060 cm^{-1} is apparently connected with a free C-Li bond or, at least, with one poorly participating in the association. The lower frequencies (870, 970 cm^{-1}), however, may be related with the C-Li bonds participating in the association. These frequencies characteristic of the vibrations of the C-Li groups in the spectra of aromatic and aliphatic organolithium compounds, as well as their close position, speak much in favor of a covalent character of the said bond in the two classes of compounds mentioned. Therefore, the assumption of an ionic character of the C-Li bond in aromatic organolithium compounds found in publications is incorrect. The authors investigate the dependence on aromatic compounds responsible for the complex formation of aliphatic compounds of this type (formation of an intermolecular lithium bond and dipole interaction). In the present paper, they study not only the effect of the purely steric factor on the strength of the lithium bond but also that of the change in the general polarity of molecules. For this purpose, they introduce other polar groups or atoms into the organic rest of the molecule. On comparison of the spectra of phenyl-, o- and p-tolyl-, biphenyl- and mesityl lithium, it

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appears that the degree and type of association of these substances are different. The CH_3-group in orthoposition has little effect on the degree and character of association. The same group in paraposition (p-tolyl lithium), however, changes the spectrum considerably (Fig 1). A complication of the nonpolar substituent in paraposition equals an extension of the carbon rest. This reduces the degree of association. The screening effect becomes most distinct in the spectrum of mesityl lithium. The symmetrically arranged CH_3-groups render the association rather difficult. Therefore, only the band of the free C-Li group at about 1052 cm^{-1} is more or less distinctly visible. Figure 2 shows the spectra of p-chloro-, p-bromo-, and p-iodophenyl lithium. 2 dipoles each - C-Li and C-Hal - are present in every case. They increase the general polarity of the molecule. This brings about an intensification of the dipole interaction between the molecules. The p-chloro-phenyl lithium is most intensely and completely associated. The spectra of α- and β-naphthyl lithium are different from all other spectra dis-

The Infrared Spectra and Structure of Aromatic Organolithium Compounds SOV/20-128-4-26/65

cussed. The band is most intensive at 943 cm^{-1} while little intensive bands are present at 1050 cm^{-1}. In crystals, these two substances are apparently in a mainly associated state. There are 2 figures, 1 table, and 5 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Physicochemical Research Institute imeni L. Ya. Karpov)

SUBMITTED: June 16, 1959

Card 4/4

66487

SOV/20-129-1-33/64

~~5(2,3,4)~~ 5.3700 (B)

AUTHORS: Rodionov, A. N., Kazennikova, G. V., Talalayeva, T. V., Shigorin, D. N., Kocheshkov, K. A., Corresponding Member AS USSR

TITLE: The Infra-red Spectra and Structure of Acetylenides of Lithium

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 1, pp 121-124 (USSR)

ABSTRACT: Acetylene and its derivatives can form complexes with each other and with several solvents by means of the hydrogen bond as well as interaction of π-electrons of the group: $-C\equiv C-$ (Ref 2). It could be assumed that the substitution of one hydrogen atom by one lithium atom in acetylene and acetylene derivatives with the aid of electrons of the C-Li bond and the π-electrons of the $C\equiv C$ group will increase the complex-forming capacity of these compounds. In order to explain the structure of this group of compounds the authors investigated the spectra of lithium compounds the authors investigated the spectra of lithium acetylenide, lithium methylacetylenide, lithium ethylacetylenide, lithium tertiary butylacetylenide, and lithium phenylacetylenide. Spectra of acetylenides and phenylacetylenides of potassium and sodium etc. were plotted in comparison. The results are summarized in figures 1 and 2 and table 1. The paper under review proved that

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66487

The Infra-red Spectra and Structure of Acetylenides of Lithium SOV/20-129-1-33/64

the molecules of lithium acetylenides in crystals form stable complexes (ammonia) with each other as well as with other compounds. The recorded bands about 1060 and 1080 cm^{-1} may be assigned to the valence vibrations of the groups $\equiv C - Li\ldots$ in the complexes. The frequency of the valence vibration of the free groups $\equiv C - Li$ seems to be 1200 cm^{-1}, as was observed in the case of lithium phenylacetylenide. Thus the authors' assumption (Ref 6) that lithium acetylenides show a stronger tendency towards complex formation than acetylene itself has been proved. This may be explained by increased polarity of the $\equiv C - L$ bond (compared with $\equiv C - H$) as well as by a more probable cooperation of one valence electron of the lithium atom using the p-orbit. There are 2 figures, 1 table, and 6 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Physico-chemical Research Institute imeni L. Ya. Karpov)

4

SUBMITTED: July 6, 1959

Card 2/2

RODIONOV, A. N., Cand Chem Sci -- (diss) "Investigation of the structure of lithium-organic compounds by the method of infra-red absorption spectra." Moscow, 1960. 11 pp; (State Committee of the Council of Ministers USSR for Chemistry, Order of Labor Red Banner Scientific Research Physical Chemistry Inst im L. Ya. Karpov); 120 copies; price not given; (KL, 17-60, 142)

81733

S/020/60/133/01/49/070
B004/B007

5.3831
5.3100

AUTHORS: Shigorin, D. N., Rodionov, A. N., Talalayeva, T. V., Kocheshkov, K. A., Corresponding Member AS USSR

TITLE: An Investigation of the Nature of Secondary Chemical Bonds

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1, pp. 178 - 181

TEXT: The authors defined the formation of secondary (less strong) chemical bonds as an additional interaction of the valence electrons caused by a change in the energy-state of the electrons in the total system of chemical bonds of the molecule. The formation of secondary bonds thus does not depend solely on the nature of the atom entering into the molecule, but also on the properties of the molecular system and on the distribution of electron density in the molecule. The authors investigated the infrared spectra of lithium-organic compounds and acetylene derivatives. The infrared spectrum of R-Li and Ar-Li compounds shows a characteristic frequency of the valence oscillations of the free C-Li group at 1050 - 1100 cm^{-1}. Measurement of the dipole moments of R-Li

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An Investigation of the Nature of Secondary Chemical Bonds

S/020/60/133/01/49/070
B004/B007

compounds in hexane gave the electric moment of 1.1 - 1.2 D for C-Li. The existence of oscillation frequencies and the low dipole moment indicate the covalence-character of the C-Li bond. In benzene- and hexane solutions of lithium-organic compounds as well as on their crystals, additional bonds were found, which lack in the vapor spectra, and which are due to complex formation. Like the compounds of Be, B, and Al, also the lithium-organic compounds form complexes by way of a secondary Li-bond. This is explained by means of the properties which these elements have in common: free energetically low p-orbits; the possibility of changing the energy state of the valence electrons in the direction s ⟶ p with only little energy. In this way, polycentric molecular electron orbits can be formed. These elements form chemical bonds not only by means of their valence electrons, but also by ceding free orbits to electrons which participate in the primary bond of other molecules. In the dimeric complex of lithium-organic compounds every C-atom of the carbon bridge with 2 Li-atoms is able to form a tricentral orbit (two electrons in the field of three nuclei). This orbit is more stable than the usual C-Li bond. For the initiation of the polymerization of ethylene and its derivatives under participation of R-Li or $Al(R)_3$, the formation of a complex[1] (I) is

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assumed on the basis of these conceptions. Together with V. I. Smirnova, the authors proved the formation of radicals in the reaction of $TiCl_4$ with R-Li by means of electron paramagnetic resonance. The formation of complex (I) is proved by the colored complexes of ethyl lithium with styrene, α- and β-methyl styrene and other unsaturated compounds, which are characterized by an intense absorption band of the C=C bond. The authors discuss the formation of secondary bonds under participation of undivided electron pairs in the complexes R-Li...X (X = O<, N<, etc.) the σ,π-conjunction $\overset{+\delta}{\mathrm{Li}}\overset{\sigma}{—}\mathrm{C}-\overset{-\delta}{\mathrm{C}}\overset{\pi}{=}\mathrm{C}-$ in the compounds of benzyl lithium and fluorenyl lithium as well as the participation of the O-Li group, O-Al group etc. in secondary bonds in acetyl acetonates under formation of quasiaromatic rings with participation of π-electrons. Accordingly, there exist various types of secondary chemical bonds, which manifests itself in the physical properties and in the reactivity of the compounds. There are 13 references: 10 Soviet, 1 British, and 2 German.

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An Investigation of the Nature of Secondary Chemical Bonds

S/020/60/133/01/49/070
B004/B007

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: March 25, 1960

Card 4/4

TALALAYEVA, T.V.; RODIONOV, A.N.; KOCHESHKOV, K.A.

Solutions of aromatic organolithium compounds in ethers. Izv.AN
SSSR.Otd.khim.nauk no.11:1990-1996 N '61. (MIRA 14:11)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
(Lithium organic compounds)

S/020/61/136/002/024/034
B016/B060

AUTHORS: Rodionov, A. N., Talalayeva, T. V., Shigorin, D. N., and Kocheshkov, K. A., Corresponding Member AS USSR

TITLE: Study of the Structure of Complexes of Organolithium Compounds With Ethers by Infrared Spectra

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 369-372

TEXT: The authors wanted to clarify the effect of ethers upon the structure and the character of complexes of organolithium compounds with the ethers. For this purpose they took infrared absorption spectra in the two-beam spectrometer type Н-800 (N-800) featuring a NaCl prism. The following compounds were examined: methyl-, ethyl-, n-butyl, phenyl-, o-, m-, and p-tolyl, p-Cl- and p-Br-phenyl-, mesityl-, and fluorenyl lithium as well as the ethers: $(C_2H_5)_2O$, $(n\text{-}C_3H_7)_2O$, $(iso\text{-}C_3H_7)_2O$, $(n\text{-}C_4H_9)_2O$, and $(iso\text{-}C_5H_{11})_2O$. Table 1 gives the vibration frequencies

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Study of the Structure of Complexes of
Organolithium Compounds With Ethers by
Infrared Spectra

S/020/61/136/002/024/034
B016/B060

2

(cm^{-1}) of the C-Li bond in fresh solutions of the mentioned organolithium compounds in the five ethers. Some of the former were synthesized directly in the respective ethers. The authors compared the spectra with the data obtained from their previous studies (Ref. 1) and in this manner assigned the absorption bands to the vibrations of the C-Li...O groups. The conclusion is drawn from an analysis of the data in Table 1 that almost all of the fresh solutions of the 11 substances mentioned display a similar spectrum in the same ether. The replacement of one ether by another has a remarkable effect upon the position of the C-Li...O group bands (Fig. 1 B). The analysis of the spectra proves that the more complicated the radicals used in the ethers, the farther the C-Li...O bands will be shifted in the region of shorter waves. It is inferred from results obtained that during the dissolution of organolithium compounds in ethers the primary complexes are deformed and decompose due to an acceptor-donor interaction and a dipole interaction with the ether. Subsequently, new complexes according to the acceptor-donor type

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Study of the Structure of Complexes of
Organolithium Compounds With Ethers by
Infrared Spectra

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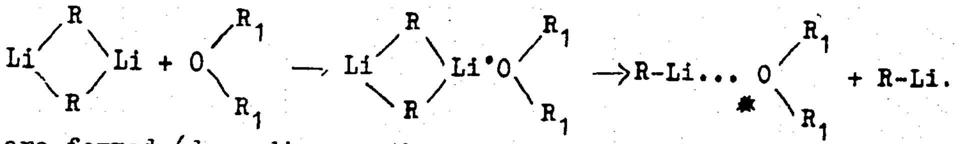

are formed (depending on the structure of the radicals of the two components) between the molecules of the ether and the organolithium compound. In this connection, the polarity of the C-Li bond is increased with increasing stability of the new complexes. In the authors' opinion, this is bound to express itself in a change both of the reactivity of the organolithium compound and its stability in the solution. This circumstance is believed to be the cause of the high activity of ethyl lithium in many reactions in the ethereal medium as well as of the poor stability of this substance in the same medium. There are 2 figures, 1 table, and 8 references: 4 Soviet, 3 German, and 1 British.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: September 14, 1960

Card 3/3

29017

S/020/61/140/004/018/023
B106/B110

5.3700

AUTHORS: Talalayeva, T. V., Rodionov, A. N., and Kocheshkov, K. A., Corresponding Member AS USSR

TITLE: Ternary complexes of methyl lithium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 4, 1961, 847-850

TEXT: Methyl lithium is very stable in diethyl ether and, thus, like the aromatic lithium compounds, phenyl lithium and tolyl lithium, which form ternary complexes of the composition $2RLi \cdot LiX \cdot 2(C_2H_5)_2O$ in ether solutions (Ref. 2: T. V. Talalayeva, K. A. Kocheshkov, DAN, 104, 260 (1955)). The authors investigated whether such ternary complexes also formed in the case of methyl lithium. Crystalline ternary complexes of the composition $CH_3Li \cdot LiX \cdot 2(C_2H_5)_2O$ (X = Br, I) could be isolated from ether solutions of methyl lithium which were obtained by reacting lithium with methyl chloride or iodide. These complexes are stable in nitrogen or argon atmosphere. Primarily the less soluble lithium iodide dietherate precipitates when lithium iodide exceeds methyl lithium. In case of lithium bromide excess

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Ternary complexes of methyl ...

in the solution, crystalline precipitates with increasing content of lithium bromide and ether are formed, e.g., $CH_3Li \cdot 2LiBr \cdot 3(C_2H_5)_2O$ or $CH_3Li \cdot 5LiBr \cdot 7(C_2H_5)_2O$. This behavior is similar to that of binary complexes of aliphatic lithium compounds with lithium halides ($RLi \cdot nLiX$, n from 1.4 to 6), which form in the reaction of alkyl halides and aliphatic RLi in hydrocarbon media. The monoetherate of methyl lithium, $CH_3Li \cdot (C_2H_5)_2O$, could be isolated from the above-mentioned ether solutions of methyl lithium. This compound contains small impurities of LiCl which are probably complex-bound. A fine powder with an IR spectrum characteristic of crystalline methyl lithium is obtained when methyl lithium is precipitated from ether solutions by excess n-pentane and the precipitate dried in vacuo at 100°C (Ref. 7: A. N. Rodionov, D. N. Shigorin, T. V. Talalayeva, K. A. Kocheshkov, DAN, 123, 113 (1958); Izv. AN SSSR, OKhN, 1958, 120; Izv. AN SSSR, ser. fiz., 22, 1110 (1958); T. L. Brown, M. T. Rogers, J. Am. Chem. Soc., 79, 1859 (1957)). This powder is, however, poorly soluble in ether even when heated (0.2-0.5 N solutions), and contains 8% lithium chloride impurities. Presumably, methyl lithium precipitates in highly associated form on destruction of the ether complex

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B106/B110

Ternary complexes of methyl ...

by n-pentane. Methylene dilithium, CH_2Li_2, a loose, fine precipitate of extreme inflammability in air, forms on pyrolysis of the resultant powder at 240°C according to Ref. 6 (K. Ziegler, K. Nagel, M. Patheiger, Zs. anorg. u. allgem. Chem., 282, 345 (1955)). Methyl lithium and methylene dilithium were used to polymerize ethylene with $TiCl_4$ (1 : 1) (Ref. 9: K. A. Kocheshkov, V. A. Kargin, T. V. Talalayeva, T. I. Sogolova, O. A. Paleyev, Vysokomolek. soyed., 1, 152, (1959); J. Polym. Sci., 34, 121 (1959)). The IR spectrum of CH_3Li in the range 2000-650 cm^{-1} is not affected by formation of the ternary complex of CH_3Li with lithium halide and ether (Ref. 8: A. N. Rodionov, T. V. Talalayeva, D. N. Shigorin, K. A. Kocheshkov, DAN, 136, 369 (1960)). The capability of forming ternary complexes with ether and lithium bromide is not limited to aliphatic and aromatic RLi but becomes also evident in the case of lithium acetylides. When pure acetylene is introduced into an ether solution of RLi ($R = CH_3$, C_6H_5, $CH_3C_6H_4$) containing an equimolecular quantity of lithium bromide, lithium acetylide precipitates, which contains lithium bromide

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Ternary complexes of methyl ...

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and ether bound in stoichiometric quantities: $2HC\equiv CLi\cdot LiBr\cdot 4(C_2H_5)_2O$ and $3HC\equiv CLi\cdot LiBr\cdot 5(C_2H_5)_2O$. If RLi exceeds lithium bromide in the initial solution, precipitates containing 1 LiBr : $4HC\equiv CLi$ are obtained. No precipitate resulted in a control test where acetylene was introduced into lithium bromide etherate for a prolonged period. The authors observed that crystalline cyclopentadienyl lithium produced by reacting cyclopentadiene and the ether solution of p-tolyl lithium in the presence of LiBr, did not contain any lithium bromide impurities when precipitated from the ether solution. There are 1 table and 11 references: 6 Soviet and 5 non-Soviet. The three most recent references to English-language publications read as follows: W. Glaze, R. West, J. Am. Chem. Soc., 82, 4437 (1960); Chemical Week, September, 17, 59 (1960); M. D. Taylor, L. R. Grant, J. Am. Chem. Soc., 77, 1507 (1955).

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: June 6, 1961

Card 4/5

5

KOCHESHKOV, K.A., PALEYEV, O.A., SOGOLOVA, T.I., SHEVERDINA, N.I., TALALAYEVA, T.V., RODIONOV, A.N.

Nouveaux composants des catalyseurs de la polymerisation de l'ethylene dans des conditions habituelles et inhabituelles.

Report submitted for the International Symposium of Macromolecular Chemistry, Paris, 1-6 July 63

RODIONOV, A.N.; SHIGORIN, D.N.; TALALAYEVA, T.V.; KOCHESHKOV, K.A.

Structure of complexes formed by aliphatic organolithium compounds. Dokl. AN SSSR 143 no.1:137-139 Mr '62. (MIRA 15:2)

1. Chlen-korrespondent AN SSSR (for Kocheshkov).
(Lithium organic compounds)

RODIONOV, A.N.; TALALAYEVA, T.V.; SHIGORIN, D.N.; TYUMOFEYUK, G.N.;
KOCHESHKOV, K.A.

Structure of complexes formed by aliphatic organolithium compounds.
Dokl. AN SSSR 151 no.5:1131-1134 Ag '63. (MIRA 16:9)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-korrespondent AN SSSR (for Kocheshkov).
(Lithium organic compounds) (Chemical structure)

TALALAYEVA, T.V.; RODIONOV, A.N.; KOCHESHKOV, K.A.

Synthesis of deuterio-substituted organolithium compounds. Dokl. AN SSSR 152 no.1:122-123 S '63. (MIRA 16:9)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-korrespondent AN SSSR (for Kocheshkov).
(Lithium organic compounds) (Deuterium compounds)

SHEVERDINA, Nataliya Ivanovna; KOCHESHKOV, Ksenofont Aleksandrovich.
Prinimala uchastiye ABRAMOVA, L.V.; NESMEYANOV, A.N.,
akademik, otv. red.; RODIONOV, A.N., red.

[Methods of the chemistry of organometallic compounds;
zinc, cadmium] Metody elementno-organicheskoi khimii; tsink
kadmii. Moskva, Nauka, 1964. 235 p. (MIRA 18:2)

L [illegible]77-65 EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/EWP(t)/EWP(b)/EWA(c)
Pc-4/Pr-4/Ps-4/Pt-10/Pu-4 IJP(c)/RPL JD/WW/JG/RM

ACCESSION NR: AP5006412 S/0062/65/000/001/0042/0046

71
70
B

AUTHOR: Rodionov, A. N.; Timifeyuk, G. V.; Talalayeva, T. V.; Shigorin, D. N.; Kocheshkov, K. A.

TITLE: Infrared spectra of certain acetylenides of lithium, sodium, and potassium

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1965, 42-46

TOPIC TAGS: spectrum analysis, acetylene, acetylene compound, lithium, lithium compound, sodium, sodium compound, potassium, potassium compound

21 21 27

ABSTRACT: The infrared spectra of certain aliphatic and aromatic acetylenides of lithium, sodium, and potassium were measured with a double-beam Hilger H-800 spectrometer with prisms of LiF, NaCl, and KBr (from 4000 to 400 cm^{-1}). Samples were taken in the form of a suspension in vaseline and fluorinated oils and were prepared in an atmosphere of dry argon. The infrared spectra obtained indicated characteristic oscillation frequencies of the groups found in this class of compounds ($\mathrm{C{-}H}, \equiv\mathrm{C{-}H(D)}, \mathrm{C{\equiv}C}, \equiv\mathrm{C{-}C}, \equiv\mathrm{C{-}H}, \equiv\mathrm{C{-}Li}$). In comparison with the oscillation of acetylene and its halide derivatives that of the $\equiv$C-H and the C$\equiv$C groups is displaced 50-100 cm^{-1} in the direction of the long waves, due to intra- and intermolecular interactions of these groups. A shift of the oscillation frequency of the bond of the

L 40777-65

ACCESSION NR: AP5006412

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alkine group occurred in the order Li → Na → K. Orig. art. has: 1 table, 1 figure.

ASSOCIATION: Fiziko-khimicheskoy institut im. L. Ya. Karpova (Physical-Chemical Institute)

SUBMITTED: 01Mar63 ENCL: 00 SUB CODE: OC, OP

NO REF SOV: 002 OTHER: 004

B

Card 2/2

RODIONOV, A.N.; TALALAYEVA, T.V.; SHIGORIN, D.N.; RODIONOVA, G.N.;
KOCHESHKOV, K.A.

Infrared spectra of isotope-substituted ethyllithium molecules. (MIRA 18:5)
Izv. AN SSSR. Ser. khim. no.4:604-610 '65.

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

ZVONKOVA, Z.V.; RODIONOV, A.N.; POVET'YEVA, Z.P.

Role of hydrogen bonding in the structures of crystalline hydrates of compound thiocyanates of metals. Kristallografiia 8 no.2:275-277 Mr-Ap '63. (MIRA 17:8)

1. Fiziko-khimicheskiy institut imeni Karpova.

L 5062-66 EWT(m)/EPF(c)/EWP(j) RPL WW/RM

ACCESSION NR: AP5025509 UR/0062/65/000/009/1607/1613

547.1'3+547.362+546.34

44,55 44,55 44,55 44,55

AUTHOR: Talalayeva, T. V.; Timofeyuk, G. V.; Rodionov, A. N.; Kocheshkov, K. A.

TITLE: Lithium acetylenides 44,55

54

50

B

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1965, 1607-1613

TOPIC TAGS: organolithium compound, acetylene, benzene, hexane, ether, lithium

ABSTRACT: The authors synthesized crystalline lithium acetylenides in benzene, hexane, and ether in the range of 0 to -50C, using acetylene alkylacetylenes, and solutions of ethyllithium, n-butyllithium, n-amyllithium, phenyllithium, and p-tolyllithium. The products were analyzed for lithium, and their IR spectra were taken. In some cases, the compounds obtained were decomposed with heavy water, and the deuterated products were studied. It was thus shown that when acetylene reacts with solutions of organolithium compounds, lithium acetylenide is formed. When acetylene reacts with aliphatic organolithium compounds in hexane at 0 - 25C, crystalline lithium acetylenide is formed in 75 - 80% yield; when alkylacetylenes react with these compounds at -50C, lithium alkylacety-

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L 5062-66

ACCESSION NR: AP5025509

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lenides are formed in 75 - 90% yield. To refine the positions of the main bands in the IR spectra, isotope-substituted lithium acetylenides were synthesized by using lithium-6 and euterium, and the IR spectra of the products were recorded. Lithium acetylenide is stable on standing, apparently because stable complexes are formed between its molecules.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute) 44,55

SUBMITTED: 25Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 009 OTHER: 012

Card 2/2

MAKAROVA, Lyubov' Gennadiyevna; NESMEYANOV, Aleksandr Nikolayevich;
KOCHESHKOV, K.A., otv. red.; RODIONOV, A.N., red.

[Methods of organometallic chemistry; mercury] Metody elementoorganicheskoi khimii; rtut'. Moskva, Nauka, 1965. 438 p. (MIRA 18:7)

1. Chlen-korrespondent AN SSSR (for Kocheshkov).

RODIONOV, A.N.; TIMOFEYUK, G.V.; TALALAYEVA, T.V.; SHIGORIN, D.N.:
KOCHESHKOV, K.A.

Infrared spectra of some acetylides of lithium, sodium, and potassium. Izv. AN SSSR Ser. khim. no.1:42-46 '65.
(MIRA 18:2)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.

L 16721-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/ESD(gs)/BSD/AFWL/
ASD(a)-5/ASD(m)-3/AS(mp)-2/AFMD(t)/RAEM(a)/APGC(b) WW/RM
ACCESSION NR: AR5000759 S/0058/64/000/009/D029/D029

B

SOURCE: Ref. zh. Fizika, Abs. 9D208

AUTHORS: Rodionov, A. N., Asnovich, E. Z.; Andrianov, K. A.; Shigorin, D. N.

TITLE: Infrared absorption spectra of some polymetallic organosiloxanes

CITED SOURCE: Sb. Vy*sokomolekul. soyedineniya. Geterotsepn. vy*sokomolekul. soyedineniya. M., Nauka, 1963, 81-86

TOPIC TAGS: ir absorption, absorption spectrum, organosilicon compound, polymetallic organic compound, monomer, polymer

TRANSLATION: The authors investigate the infrared spectra of poly-tin-organosiloxanes, poly-titanium-organosiloxanes, and poly-aluminum-organosiloxanes with different organic radicals (CH_3, C_2H_5, C_6H_5) in the 1100--400 cm^{-1} region in vaseline oil and in KBr tablets (1.5--2 mg of substance per 100 mg KBr). Comparison of the spectra of the

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L 16721-65
ACCESSION NR: AR5000759

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normal monomer $((CH_3)_3SiO)_4Sn$ and $((CH_3)_3SiO)_4Ti$ with the literature data for analogously constructed compounds has made it possible to attribute the ∿ 900--980 cm^{-1} band to the valence oscillations of Si-O in the Si-O-M group and the 530--600 cm^{-1} band to the oscillations of the M-O bond. It is found that in the spectra of all the investigated polymers, there are also present the ∿ 900--980 and 530--600 cm^{-1} bands, the intensity of which depends on the Si/M ratio, thus confirming the correctness of attributing the bands in these regions of the spectrum of monomers, and indicates that the frequencies of absorption of the group Si-O-M are conserved on going from the monomer to the polymer. The position of the absorption bands of the Si-O-M groups changes little when one of the investigated metals is replaced by another, and this, in the authors' opinion, is connected with the superposition of various factors (waveform of the oscillations, strength and polarity of the band, mass of the atoms, etc.), which determine the value of the frequencies of the corresponding oscillations.

SUB CODE: OC, OP

ENCL: 00

Card 2/2

ACCESSION NR: AT4033990 S/0000/63/000/000/0081/0086

AUTHOR: Rodionov, A. N.; Asnovich, E. Z.; Shigorin, D. N.; Andrianov, K. A.

TITLE: Infrared absorption spectra of some metallic silicones

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 81-86

TOPIC TAGS: polymer, silicone, siloxane, polyorganosiloxane, metallic silicone, aluminum containing silicone, titanium containing silicone, tin containing silicone, silicone spectral analysis, polyphenyl siloxane, polymethyl siloxane, polyethyl siloxane

ABSTRACT: Absorption spectra of polymethyl-, polyethyl- or polyphenyl siloxanes containing Al, Ti or Sn in various ratios to Si were analyzed for the range 400-1100 cm^{-1}. Bands corresponding to Si-O valence fluctuation in the Si-O-Sn group were identified at 900-980 cm^{-1}, those for Sn-O at 530-580 cm^{-1}. Band intensities in these spectral regions varied for all polymers in relation to the metal/Si ratio, indicating preservation of absorption frequencies of the Si-O-metal group during monomer to polymer conversion. Location of absorption bands for such group varied little from one metal to another. Orig. art. has: 3 graphs, 2 tables,

Card 1/2

ACCESSION NR: AT4033990

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Institute of Physical Chemistry); Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Metalloorganic Compounds AN SSSR)

SUBMITTED: 06Jul62	DATE ACQ: 30Apr64	ENCL: 00
SUB CODE: OC	NO REF SOV: 004	OTHER: 003

Card 2/2

TALALAYEVA, T.V.; RODIONOV, A.N.; KOCHESHKOV, K.A.

Mixed complexes of phenyllithium, methyllithium, n-butyllithium, and lithium halides. Dokl. AN SSSR 154 no.1:174-177 Ja'64. (MIRA 17:2)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.
2. Chlen-korrespondent AN SSSR (for Kocheshkov).

RODIONOV, A. P.

Peach - Ukraine

Kyev peaches. Sad i og. no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, ___________ 1953. Unclassified.

RODIONOV, A.P.

Vegetative hybrids of peach on apricot. Izvest. Akad. Nauk S.S.S.R., Ser. Biol. '53, No.1, 36-45. (MLRA 6:3)
(CA 47 no.14:7040

1. Ukrain. Inst. Plodovodstva, Kiev-Kitaevo.

RODIONOV, A.P.

Fruit and berry breeding in the Ukraine. Izv.AN SSSR. Ser.biol. no.4:3-13 Jl-Ag'55. (MLRA 8:10)

1. Ukrainskiy institut plodovodstva, Kiyev-Kitayevo
(Ukraine--Berries) (Ukraine--Fruit culture)

RODIONOV, A.P.

Late fall seeding of peach. Izv. AN SSSR. Ser.biol. no.4:67-73
Jl-Ag '56. (MLRA 9:10)

1. Institut plodovodstva, Kiyev-Kitayevo.
(PEACH)

M-7

USSR / Cultivated Plants. Fruits, Berries.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58750

Author : Rodionov, A. P.
Inst : All-Union Academy of Agricultural Sciences im. Lenin
Title : The Effect of Drying Peach Seeds Which Had Passed Through the Vernalization Stage on the Winter Resistance of Seedlings

Orig Pub : Dokl. VASKhNIL, 1957, No 5, 23-25

Abstract : All kernels were carefully washed and then dried during 4 days. The first group of seeds was dried for an extra 45 days; then it was stratified during 150 days. The second group was stratified and then dried; the third group was stratified from the time of the harvest until planting. The seedlings of the third group grew best. The least amount of growth was shown by the seedlings of the second variance.

Card 1/2

USSR / Cultivated Plants. Fruits, Berries.

M-7

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58750

The plants hibernated without cover, without fall soil redigging in a severe winter. Seedlings, dried after stratification, were the most winter resistant.
-- S. I. Petyaev

Card 2/2

SIMIRENKO, Lev Platonovich [deceased]; SHEPEL'SKIY, A.I., kand. sel'-khoz. nauk, glav. red.; KOVTUN, I.M., kand. sel'khoz. nauk, zam. glav. red.; POSTYUK, A.V., zam. glav. red.; RODIONOV, A.P., doktor biol. nauk, zam. glav. red.; DEM'YANETS, Ye.F., starshiy nauchnyy sotr., red. toma; LISOVENKO, L.T., kand. biol. nauk, nauchnyy sotr., red. toma; NIKONENKO, M.N., kand. biol. nauk, red. toma; POSTOYUK, A.V., red.; DEREVYANKO, G.S., tekhn. red.

[Pomology in three volumes; apple, pear, stone fruits] Pomologiia v trekh tomakh; iablonia, grusha, kostochkovye porody. Kiev, Izd-vo Ukrainskoi Akad. sel'khoz. nauk. Vol.1. [Apple] IAblonia. 1961. 578 p. (MIRA 15:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut sadovodstva (for Dem'yanets, Lisovenko).

(Apple--Varieties)

RODIONOV, A.S.

Studying machinery in the physics course for secondary schools.
Uch.zap.Penz.gos.ped.inst. no.7:15-29 '62. (MIRA 16:7)
(Physics--Study and teaching) (Machinery)

RODIONOV, A.S.

More on the shortcomings of standard designs of small boiler systems. (MIRA 18:10)
Prom. energ. 20 no.10:59 O '65.

1. Ivanovskiy oblastnoy remontno-stroitel'nyy trest.

RODIONOV, A.S.

Activation of the educational process in mechanical engineering lessons. Uch.zap.Penz.gos.ped.inst. no.7:77-88 '62. (MIRA 16:7)
(Mechanical engineering--Study and teaching)

RODIONOV, A.S., aspirant

Study of the internal combustion engine in mechanical engineering classes of secondary schools. Uch.zap.MGPI 118:55-82 '57.
(MIRA 13:5)

1. Kafedra metodiki prepodavaniya fiziki Moskovskogo gosudarstvennogo pedagogicheskogo instituta.
(Gas and oil engines)

RODIONOV, A. S.

43349 RODIONOV, A. S. - Avtomatizatsiya i mekhanizatsiya proizvodstvennykh protsessov i sredstv kontrolya. V sb: Opyt novatorov mashinostroyeniya. Kuybyshev, 1948, s. 81-105.

SO: Letopis' Zhurnal'nykh Statey, Vol. 47, 1948.

L 1653-66 EWT(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACCESSION NR: AP5021620

UR/0286/65/000/013/0101/0101
621.979.984.002.54
12
B

44,55 44,55 44,55 44,55
AUTHOR: Shofman, L. A.; Gedymin, Yu. Yu.; Rozhkov, V. M.; Starikov, V. S.; Kryuchkov, M. A. 44,55; Davydov, G. 44,55; Akhmetshin, M. 44,55; Kvitnitskiy, A. E.; 44,55 Rogozinskiy, A. A.; Feygin, V. I.; Yegorov, I. V.; Roytberg, L. Kh.; Yermanok, M. Z; Rodionov, A. B. 44,55
44,55 44,55 44,55 44,55

TITLE: Method for tube extrusion. Class 49, No. 172601
16 44,55 18

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 101

TOPIC TAGS: metal, metal tube, metal extrusion, tube extrusion

ABSTRACT: This Author Certificate introduces a method for tube extrusion from solid ingots. In this method the metal is first divided into several strips which are subsequently welded in the next die. In order to reduce the extrusion pressure, the diameter of the ingot should be smaller than that of the extruded tube. [AZ]

ASSOCIATION: none

SUBMITTED: 30Jan62
ENCL: 00
SUB CODE: MM
NO REF SOV: 000
OTHER: 000
ATD PRESS: 4095
Card 1/1 DP

7

L 1655-66 EWT(d)/EWT(m)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(1)/EWA(c)
JD/HW
ACCESSION NR: AP5021621 UR/0286/65/000/013/0102/0102
621.979.984.002.54

69 B

AUTHOR: Shofman, L. A.; 44,55 Gedymin, Yu. Yu.; 44,55 Rozhkov, V. M.; 44,55 Starikov, V. S.; 44,55 Kvitnitskiy, A. N.; 44,55 Kryuchkov, M. M.; 44,55 Davydov, G. V.; 44,55 Akhmetshin, M. A.; 44,55 Yermanok, M. Z.; 44,55 Rogozinskiy, A. A.; 44,55 Feygin, V. I.; 44,55 Yegorov, I. V.; 44,55 Roytbarg, L. Kh.; 44,55 Rodionov, A. S. 44,55

TITLE: Tool for extruding of tubes. Class 49, No. 172602

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 102

TOPIC TAGS: tube, metal tube, tube extrusion, extrusion tool, extrusion press 44,55 14

ABSTRACT: This Author Certificate introduces a tool for the extrusion of tubes from solid ingots, i.e., container, mandrel, welding chamber, and die. In order to increase the rigidity of individual tools and ensure their precise position in relation to one another, thereby improving the accuracy of the extruded tubes, the mandrel is rigidly mounted in relation to the container; it carries an internal die and is provided with a central compartment for the ingot. Radial canals connect this compartment with the welding chamber, which is formed between container wall and the mandrel surface. [AZ]

Card 1/2

L 1655-66

D

ACCESSION NR: AP5021621

ASSOCIATION: none

SUBMITTED: 31Jan62

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

ATD PRESS: 4095

Card 2/2

[illegible]

KUZNETSOV, Sergey Grigor'yevich; RODIONOV, Adrian Vladimirovich; KARP, Ye.M., red.; CHERNOV, V.S., tekhn.red.

[Automobile transportation in the building of hydroelectric power plants] Avtotransport na stroitel'stve gidroelektrostantsii. Moskva, Gos.energ. izd-vo, 1957. 79 p. (V pomoshch' gidroenergeticheskim stroikam, no.23) (MIRA 11:3)

(Hydroelectric power stations)
(Transportation, Automotive)

S/269/63/000/001/022/032
A001/A101

AUTHOR: Rodionov, A. V.

TITLE: Some problems of longitudinal distribution of sunspot groups

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 1, 1963, 65, abstract 1.51.438 ("Tsirkulyar Astron. observ. L'vovsk. un-ta", 1962, no. 37 - 38, 99 - 100)

TEXT: The author investigates the longitude distribution of sunspot groups during 1901 - 1953. It has been established that for sunspot groups whose area is less than $200 \times 10^{-6}\ S_{\odot}$ the most active clearly pronounced longitude in the northern hemisphere is observed in odd cycles. In the southern hemisphere the alternation of cycles is less pronounced. For sunspot groups with area larger than $200 \times 10^{-6}\ S_{\odot}$ and one-day groups in each cycle, more active longitudes for all groups are shifted through 20° relative to each other and relative to groups with area of $200 \times 10^{-6}\ S_{\odot}$. In the years of maxima, active longitudes in the northern and southern hemispheres of the Sun are shifted westwards and in the years of minima they are located more to the east. T. Mandrykina

[Abstracter's note: Complete translation]

Card 1/1

SHEVCHENKO, V.B.; SOLOVKIN, A.S.; SHILIN, I.V.; KIRILLOV, L.M.; RODIONOV, A.V.; BALANDINA, V.V.

Effect of the nature of the diluent on the extraction of uranyl nitrate by tributylphosphate. Radiokhimiia 1 no.3:257-269 '59. (MIRA 12:10)

(Uranyl nitrate) (Butyl phosphate)

5(1)

AUTHORS: Timoshev, V. G., Rodionov, A. V., Koltunov, V. S., Chumakov, P. S. SOV/32-25-3-54/62

TITLE: Laboratory Extractor With Gas Lifter (Laboratornyy ekstraktor s gazoliftom)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 377-378 (USSR)

ABSTRACT:

The described extractor with gas lifter is practically a set of individual parts in which each of the individual parts has roughly the effect of 0.95 of a theoretical plate. Thus, by changing the number of individual parts, the extractor may be adjusted to whatever efficiency is needed. In the present case a device composed of 48 sections, i.e. corresponding to 45 theoretical plates, was used. The sketch of an individual part of the extractor is given (Fig) by means of which the operation of the device is described. The extractor may be used for the extraction-separation of substances, and for various technical processes based on liquid extraction. There is 1 figure.

Card 1/1

SHEVCHENKO, V.B.; SOLOVKIN, A.S.; SHILIN, I.V.; KIRILLOV, L.M.; RODIONOV, A.V.;
BALANDINA, V.V.

Effect of hydrocarbons of the aliphatic and aromatic series on the extraction of U(VI), Pu(IV), Zr(IV), and Ce(III) with tri-n-butylphosphate from nitric acid solutions. Radiokhimiia 2 no.3:281-290 '60. (MIRA 13:10)

(Hydrocarbons) (Extraction (Chemistry))
(Butyl phosphate)

TIMOSHEV, V.G.; PETROV, K.A.; RODIONOV, A.V.; BALANDINA, V.V.; VOLKOVA, A.A.;
YEL'KINA, A.V.; NAGNIBEDA, Z.I.

Extraction capacity of neutral, oxygen-containing organic substances.
Radiokhimiia 2 no.4:419-425 '60. (MIRA 13:9)
(Extraction (Chemistry))

PETROV, K.A.; SHEVCHENKO, V.B.; TIMOSHEV, V.G.; MAKLYAYEV, F.A.; FOKIN,
A.V.; RODIONOV, A.V.; BALANDINA, V.V.; YEL'KINA, A.V.; NAGNIBEDA,
Z.I.; VOLKOVA, A.A.

Alkyl phosphonates, diphosphonates, and phosphine oxides as
extracting agents. Zhur.neorg.khim. 5 no.2:498-502
F '60. (MIRA 13:6)
(Phosphonic acid) (Phosphine oxide)
(Extraction(Chemistry))

S/830/62/000/001/002/012
E111/E192

AUTHORS: Timoshev, V.G., Petrov, K.A., Rodionov, A.V., Balandina, V.V., Volkova, A.A., Yel'kina, A.V., and Nagnibeda, Z.I.

TITLE: Importance of the structure and physical state of extraction-solvent molecules

SOURCE: Ekstraktsiya; teoriya, primeneniye, apparatura.
Ed. by A.P. Zefirov and M.M. Senyavin.
Moscow, Gosatomizdat, 1962. 88-103.

TEXT: Taking the criterion of extraction ability as the distribution coefficient, and the ratio B (the number of hydrogen to the number of carbon atoms in the solvent), the authors study the distribution of uranyl, plutonium (IV), zirconium and niobium nitrates. The feed comprised 0.5 - 1 or 2 N aq. nitric acid solution. Extracting with orthoformates and phosphates the extractive ability falls with decreasing B values - steric hindrance playing an important part. With phosphonates the opposite relation holds - the water solubility of the lower homologues and their polymerization being important factors.

Card 1/2

Importance of the structure and ... S/830/62/000/001/002/012
E111/E192

The extractive ability of phosphonates increases at the same time as the alkyl radicals become less electrophilic and the solvents less soluble; however, when the radicals become comparatively large, steric hindrances become decisive and extractive ability falls sharply in spite of reduced solubility. The same holds for phosphine oxides and amines. Forther work to generalize these relations is contemplated.
There are 15 figures.

Card 2/2

S/269/63/000/002/016/037
A001/A101

AUTHORS: Kashirin, G. F., Rodionov, A. V.

TITLE: On fluctuation indices of solar activity (On the index of fluctuation frequency and the combined fluctuation index)

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 2, 1963, 55, abstract 2.51.440 ("Tsirkulyar Astron. observ. L'vovsk. un-ta", 1962, no. 37 - 38, 56 - 58)

TEXT: The authors introduce the notions of the index of fluctuation frequency and the combined fluctuation index. The index of fluctuation frequency must show, how frequently occur flares of solar activity during a given time unit of reckoning. The combined fluctuation index must reflect both the sharpness of solar activity fluctuations and their frequency in time.

T. M.

[Abstracter's note: Complete translation]

Card 1/1

TIMOSHEV, V.G.; PETROV, K.A.; RODIONOV, A.V.; BALANDINA, V.V.;
VOLKOVA, A.A.; YEL'KINA, A.V.; NAGNIBEDA, Z.I.

Importance of the structure and physical state of the molecules of extractive reagents. Ekstr.;teor.,prim., app. no.1:88-103 '62. (MIRA 15:11)
(Extraction (Chemistry))

RODIONOV, A.Ya.

School geographical training area for the aid of studying the native region. Uch. zap. GGPI no.46:158-176 '64. (MIRA 18:4)

ANUCHIN, N.P., prof., otv. red.; [illegible], M.M., red.; DERYABIN, D.I., kand. sel'khoz. nauk, red.; ZHELEZNOV, G.F., kand. sel'khoz. nauk, red.; IVANNIKOV, S.P., kand. sel'khoz. nauk, red.; IVANOV, G.G., red.; LARYUKHIN, G.A., kand. tekhn. nauk, red.; LOSITSKIY, K.B., doktor sel'khoz. nauk, zam. otv. red.; MIRONOV, V.V., kand. sel'khoz. nauk, red.; RODIONOV, A.Ya., kand. sel'khoz. nauk, red.; TRUBNIKOV, M.M., kand. ekon. nauk, red.; CHEVEDAYEV, A.A., kand. sel'khoz. nauk, red.; SHUMAKOV, V.S., kand. sel'khoz. nauk, red.; YURGELSON, P.B., doktor biol. nauk, red.; TROPIN, I.V., kand. sel'khoz. nauk, red.

[Studying the performance of new machinery in silvicultural work; scientific papers] Issledovanie rabochikh protsessov novykh mashin na lesokul'turnykh rabotakh; nauchnye trudy. Moskva, Izd-vo "Lesnaia promyshlennost'," 1964. 111 p. (MIRA 17:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut lesovodstva i mekhanizatsii lesnogo khozyaystva.

VASIL'YEV, P.V., prof., doktor ekon. nauk; PONOMAREV, A.D.; SOLDATOV, A.G., kand. sel'khoz. nauk; MOTOVILOV, G.P., doktor sel'khoz. nauk; NEVZOROV, N.V., kand. ekon. nauk; LOSITSKIY, K.B., kand. sel'khoz. nauk; RODIONOV, A.Ya., kand. sel'khoz. nauk: CHARKINA, A.P., kand. sel'khoz. nauk; LUTSEVICH, A.A., kand. sel'khoz. nauk; KOZHEVNIKOV, M.G., dots.; ALEKSEYEV, P.V., kand. sel'khoz. nauk; ZORIN, A.V., aspirant; BARANOV, N.I., kand. sel'khoz.nauk [deceased]; NAUMENKO, I.M., prof., doktor sel'khoz.nauk; IL'IN, A.I., kand.sel'khoz. nauk; MOISEYENKO,F.P., kand. biol. nauk; ZAKHAROV, V.K., prof., doktor sel'khoz. nauk; GECHIS, Yu.P., starshiy nauchnyy sotr.; BUTENAS, Yu.P., kand. sel'khoz. nauk; BUBLIS, K.A., aspirant; KALNIN'SH, A.Ya., kand. sel'khoz. nauk; ZVIYEDRIS, A.I., kand. sel'khoz. nauk; SUKACHEV, V.N., akad. red.; ZHUKOV, A.B., prof., red.; PRAVDIN, L.F., prof., red.; MAKAROVA, L.V., red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Problems of increasing forest productivity in four volumes] Problemy povysheniia produktivnosti lesov v chetyrekh tomakh. Moskva, Goslesbumizdat. Vol.4.[Economic problems of increasing forest productivity and accelerating ripening and cutting ages]Ekonomicheskie voprosy povysheniia produktivnosti lesov, vozrasty spelosti i vozrasty rubok. 1961. 253 p. (MIRA 15:1)

1. Akademiya nauk SSSR. Institut lesa. 2. Nachal'nik Glavnoy inspektsii po lesnomu khozyaystvu i polezashchitnomu lesorazvedeniyu Ministerstva sel'skogo khozyaystva SSSR (for Ponomarev).

(Forests and forestry—Economic aspects)

14-57-6-11638

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6, p 6 (USSR)

AUTHOR: Rodionov, A. Ya.

TITLE: Practical Utilization of the Globe (Prakticheskiye raboty s globusom)

PERIODICAL: V sb: Uchitelya geogr. o svoyey rabote. Moscow, Akad. ped. nauk RSFSR, 1955, pp 62-84

ABSTRACT: Bibliographic entry

Card 1/1

1. RODIONOV, A. YA.

2. USSR (600)

4. Agricultural Machinery

7. For further improvement of work with inventors. Les. khoz. 6, no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

SMIRNOV, V., kand.tekhn.nauk (Saratov); RODIONOV, B., inzh. (Saratov)

Methods of calculating gas consuption without meters. Zhil.-kom. khoz. 11 no.12: 32-33 D '61. (MIRA 16:11)

SHAKHPARONOV, V., inzh; RODIONOV, B., inzh.

"Zero" cycle of an industrial building of a new type. Stroitel' 8 no.4:5-6 Ap '62. (MIRA 15:7)
(Concrete footings)

124-57-1-581

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 73 (USSR)

AUTHOR: Rodionov, B.L.

TITLE: Laboratory Investigations of the Dissipation of Waves in a Following and an Opposing Current (Laboratornyye issledovaniya gasheniya voln vstrechnym i poputnym potokom)

PERIODICAL: Tr. Leningr. in-ta inzh. vod. transp., 1955, Nr 22, pp 166-172

ABSTRACT: A description is adduced of a large glass tray equipped with a wave-making device, in which a uniform flow with a given discharge rate is obtained for various heights of the water-level. Bearing in mind the theory of the pneumatic breakwater, two series of tests were performed: 1) in the first series the effect of a countercurrent on the dissipation of the waves was investigated; 2) the second series dealt with the effect of a following current. From the results of the tests the effect of the flow velocity on the dissipation of the waves was established for a selected range of flow velocities. From the results adduced it follows that the most effective dissipation of the waves is observed in a countercurrent. The author indicates that the accuracy of the results is not overly good. I.N.Kochina

Card 1/1

1. Waves--Dissipation 2. Ocean currents--Applications

RODIONOV, B. L.

Rodionov, B. L. "Investigation and calculation of a pneumatic wave-breaker." Min River Fleet USSR. Leningrad Inst of Water Transport Engineers. Leningrad, 1956. (Dissertation for the Degree of Candidate in Technical Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109; 111.

RODIONOV B.M.

RODIONOV, B.M., dots., kand. tekhn. nauk.

Photogrammetric operations in aerial photographic surveys made for determining the direction and speed of river flow. Trudy MIIGAIK no.27:33-43 '57. (MIRA 11:1)

1. Kafedra aeros"yemki, Moskovskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii.
(Photogrammetry) (Rivers)

RODIONOV,B.

"Determination of the Speed and Direction of River Currents by Aerial Photographic Surveys," by Candidate of Technical Sciences B. Rodionov, Grazhdanskaya Aviatsiya, No 10, Oct 55, p 30

A method is presented for determining the speed and direction of river currents by aerial photography for use in hydroelectric power plant designing. This is accomplished by the photographing of floating wood panels or ice floes on the surface of the river from airplanes or helicopters at accurately determined altitudes. Increased productivity and reduction of ground operations are obtained.

SUM. 1287

Rodionov, B.

3

Aerofotos'emka s Vertoleta Mi-4. B. Rodionov. *Grazhdanskaia Aviatsiia*, Dec. 1958, pp. 18, 19. In Russian. Description of a technique of aerial photography used on an Mi-4 helicopter. 60

CHA

RODIONOV, B.

"The Use of Maps in Regional Aerial Photography," by B. Rodionov, Candidate of Technical Sciences, Grazhdanskaya Aviatsiya, No 1, Jan 56, pp 17-18

The article presents a method of plotting flight courses and relevant data on regional maps, as preflight preparation for aerial photographic surveys.

This improves upon the method used up to this time, in that the boundaries of the section to be surveyed are plotted, inside which the lines of the courses are laid out; noted also are: the time in the course, the EMPU radio altimeter reading, the preassigned altitude of the flight for the given section, the sight angle, and the total time necessary for photographing the section. Thus the flight map lists all the data for the exact timing of operations and the calculation of the survey of the section.

Sum: 1305

RODIONOV, B., kandidat tekhnicheskikh nauk.

Standard high-precision turn. Grazhd.av.13 no.5:30-32 My '56.
(Airplanes--Piloting) (MLRA 9:9)

RODIONOV, B., dotsent, kandidat tekhnicheskikh nauk.

Aerial photography from a Mi-4 helicopter. Grazhd.av.13 no.12:18-20 D '56. (MLRA 10:2)

(Photography, Aerial)

RODIONOV, B.G.; MAKSIMOV, N.N.; KOSTYUNINA, G.P.

Automatic temperature control in gas-heated spaces. Gaz. prom.
6 no.9:25-28 '61. (MIRA 14:12)
(Gas--Heating and cooking)
(Automatic control)

RODIONOV, B.G.; MAKSIMOV, N.N.; KOSTYUNINA, G.P.

Complex automatic safety devices for heating plants. Gaz.prom. 5
no.8:29-32 Ag '60. (MIRA 13:10)
(Gas appliances--Safety measures)
(Automatic control)

RODIONOV, B.L., kand.tekhn.nauk; TERESHCHENKO, P.L., inzh.

Forming holes in the ice by the explosion of a blasting fuse in laying pipelines. Transp. stroi. 12 no.12:27-29 D '62. (MIRA 16:1)

(Blasting) (Ice on rivers, lakes, etc.) (Pipelines)

RODIONOV, B.N., dots.kand. tekn. nauk

Using radio equipment in aeronavigation during aerial photographic surveying. Izv. vys. ucheb. zav.; geod. i aerof. no. 2:31-36 '57.
(MIRA 11:7)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii.
(Aerial photogrammetry)
(Radio in aeronautics)

POKROVSKIY, V., inzhener; RODIONOV, B., inzhener.

Interprovincial repair organizations are needed. Sots. trud no.7:
136 Jl '57. (MLRA 10:8)

1. Penzenskii spirtotrest.
(Repairing)

RODIONOV, B.

Organizing thorough check and servicing of automobiles at the First Taxicab Park in Leningrad. Avt.transp. 35 no.11:10-11 N '57. (MIRA 10:12)

1.Nachal'nik tekhnicheskogo otdela 1-go taksomotornogo parka, Leningrad.

(Leningrad--Automobiles--Maintenance)

TKACHENKO, V.N.; BUKAYEV, V.P.; RODIONOV, B.G.

Experience in planning the joint electric corrosion protection of urban underground metallic installations. Gaz.prom. 6 no.8:43-46 '61. (MIRA 14:10)
(Pipelines--Cathodic protection)

RODIONOV, B.N.

AUTHOR: Feklistov, Ye. M., Engineer SOV/154-58-2-18/22

TITLE: Scientific and Technical Conference of the MIIGA i K (Nauchno-tekhnicheskaya konferentsiya MIIGA i K) III

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1958, Nr 2, pp 115-116 (USSR)

ABSTRACT: In the section for aerophoto-geodetical and photogrammetrical instruments the following persons gave lectures: Professor M. M. Rusinov on "New Tendencies in the Production of Objectives in Instruments Used for Cartographical Aerial Photography." Professor A. N. Lobanov: "On Three-Dimensional Phototriangulation and the Use of Electronic Computers." Professor A. P. Mashkovich: "On Some Theoretical Statements With Regard to Questions of Photogrammetry in Connection With the Production of Precision Instruments for These Purposes." Engineer M. V. Manov: "The Radio-Synchroniser for Simultaneous Photos From Two Airplanes." Professor K. S. Lyalikov: "Apparatus and Laboratories for Aerial Methods of the AS USSR for the Study of Spectral Intensity." Docent N. P. Zakasnov: "Making the Transformation of Aerial Photographs Automatic." Engineer L. P. Churayev: "Automatic Control of the AFA Exposure." Engineer I. G.

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Indichenko: "Stereophotogrammetrical Coupled Cameras." In a joint session of the sections for geodetical and photogrammetrical instruments Engineer L. Ye Mindlin read a paper on "The Method of Heterodyne Phases in Geophysical Photos." Docent B. N. Rodionov reported on "The Problem of Making Aerial Photography Automatic."

Altogether, there were 32 lectures and reports given. 32 delegates participated in the discussions.

Card 2/2

RODIONOV, B. (Moskva)

Photographic drawing. Sov. 18 no.12:50 D '58. (MIRA 11:12)
(Photography)

Rodionov, B.N.

PHASE I BOOK EXPLOITATION SOV/3443
SOV/43-M-34

Moscow. Institut inzhenerov geodezii, aerofotos"yemki i kartografii

Trudy, vyp. 34 (Transactions of the Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography, No. 34) Moscow, Geodezizdat, 1959. 129 p. 1,000 copies printed.

Sponsoring Agency: USSR. Ministerstvo vysshego obrazovaniya.

Ed.: A.I. Mazmishvili; Tech. Ed.: V.V. Romanova; Ed. of Publishing House: T.A. Shamarova.

PURPOSE: This book is intended for personnel in the field of cartography.

COVERAGE: This issue discusses problems of interest in many fields connected with cartography, including photo-lab work, triangulation and photogrammetry. The article on photochemistry is a short review of its development and of various processes used in the USSR. A short article on triangulation deals with the accuracy of longitude determinations. Of general interest to cartographers and geographers is the discussion of permafrost regions of the USSR. This discussion is accompanied by excellent aerial views of tundra landscapes and an excellent map of permafrost distribution in the USSR. There is a discussion of the use of the theory of errors in the field of photogrammetry. Articles are also included on automatic approach to a flight line in aerial photography and on tests of a modulated light range finder. A list of references follows each article.

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Card 3/3

Rodionov, B. N.

TITLE: Scientific-technical Conference of the MIIGA i K in 1959 (Nauchno-tekhnicheskaya konferentsiya MIIGA i K 1959 g.)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1959, Nr 5, pp 144 - 146 (USSR)

ABSTRACT: The periodic scientific-technical conference of the Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers) was held on April 22-24, 1959, with the participation of 500 persons. 31 lectures were delivered. The introductory speech was held by Professor A. A. Izotov. Candidate of Philosophical Sciences A. I. Ivanov lectured on "The Outstanding Work of Materialistic Philosophy"; Candidate of Technical Sciences A. V. Kondrashkov on "Radioelectronics and Geodesy"; Candidate of Technical Sciences G. V. Bagratuni on "Accuracy of the Solution of the Inverse Position Computation With Coordinates of Different Geodetic Systems"; Candidate of Technical Sciences P. F. Shokin reported on "Gravimetry in Today's Stage of Development"; Candidate of Technical Sciences V. D. Bol'shakov on "Investigation of the Rules Governing the Distribution of Errors When Generalizing the Relief in Photography"; Post-graduate Student Yu. V. Mokhov on "The Influence of the Rounding Error on the Accuracy of Solutions of Linear Equation Systems". Post-graduate Student N. D. Drozdov reported "On the Solution of Linear Systems in the Compensation of Geodetic Nets". Docent V. M. Korolevtsev dealt with "The Experience in the Application of Parallactic Polygonometry With Short Basis and Constant Vertical Basis". Doctor of Physical and Mathematical Sciences A. M. Faynsil'berg lectured on "Some Integrals From the Theory of Surfaces and Their Application to the Mechanics of Artificial Earth Satellites"; Candidate of Technical Sciences A. S. Valuyev on "The Stereocomparator With Correctors". Assistant M. I. Burov spoke on "Photogrammetric Method of Determining the Altitudes of Luminous Clouds". Candidate of Technical Sciences N. B. Veselovskiy reported on "The Generalization of the Formulae for the Plane Aerial Survey and the Altitudinal Aerial Survey". Candidate of Technical Sciences B. N. Rodionov and Candidate of Technical Sciences N. P. Zakaznov dealt with "Central Shutters of Band Type Aerial Cameras". Candidate of Technical Sciences B. N. Rodionov spoke on the "Stroboscopic Collimator Visor"; Engineer V. I. Yerkhov reported on a "Computing Gear for the Automatic Entry of the Airplane in the Aerial Photography Path". Post-graduate Student Yu. N. Kuznetsov spoke on the "Application of the Instantaneous Photography for Aerial Camera Testing". Assistant Ye. P. Arzhanov spoke on the "Computation of the Aerial Camera Constants"; Engineer V. I. Grushin, Chief Technician of the Geotekhkontora Gosplana RSFSR on "Some Results and Tasks Related to Large-scale Phototheodolite Surveying Operations"; Doctor of Technical Sciences V. I. Sukhov on "The Problem Concerning the Contents of the New Map on the Scale of 1 : 2500000"; Doctor of Technical Sciences A. I. Preobrazhenskiy on "Mineral Deposits in the USSR and Their Reproduction on Economic Maps"; Assistant S. S. Sudakova on the "Method of Geographic Investigation on the Field During the Preparatory Editorial Work on the Cartographing Object (From the Working Experience Acquired by the Meshcherskaya ekspeditsiya (Meshcherskaya Expedition of the MIIGA i K 1958)". Assistant A. S. Tolstoukhov dealt with "The Problem of Improving the Relief Representation of a Flat Inhabited Territory on the Topographic Map on the Scale of 1 : 10000". Candidate of Technical Sciences Yu. S. Bilich spoke on "Maps of Cultivated Areas in the Comprehensive Atlantes of the Oblast'". Candidate of Technical Sciences I. I. Men'shikov dealt with "A. S. Popov - Scientist, Inventor, Pedagogist (On the 100th Birthday of A. S. Popov)". Senior Lecturer N. V. Yakovlev lectured on "Mirror Lens Objectives With Great Luminous Intensity". Professor A. G. Sarkin reported on "The Problem of Compensating the Variations and the Increase of Accuracy in the Measurement of Physical Quantities". Candidate of Technical Sciences V. A. Afanas'yev dealt with "Methods of Measuring Investigations Concerning Optical Main Characteristics of Aerial Camera Objectives With Dropping Atmospheric Pressure and Temperature". Engineer V. M. Nazarov lectured on "Vertical Axis Systems of High-precision Optical Theodolites". Assistant V. S. Usov spoke on "Sighting by the Aid of Telescopes With Zone Plates". Post-graduate Student P. P. Zakharov dealt with "The Automation of Measurements on a Pair of Stereoscopic Pictures". At the Plenary Session held on April 24 the Chief of the Glavnoye upravleniye geodezii i kartografii MVD SSSR (Chief Administration of Geodesy and Cartography of the Ministry of Internal Affairs of the USSR), A. N. Baranov lectured on "The Seven-year Plan and the Development of Topographic-geodetic and Cartographic Work".

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3(2),3(4)

AUTHOR: None Given SOV/6-59-6-21/22

TITLE: Chronicle (Khronika)

PERIODICAL: Geodeziya i kartografia, 1959, Nr 6, pp 74-75 (USSR)

ABSTRACT: At the Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers), the Ordinary Scientific Conference took place on April 22-24. A. I. Ivanov, Docent, Candidate of Philosophic Sciences, spoke on "The Outstanding Work of Materialistic Philosophy". A. N. Baranov, Chief of the Glavnoye upravleniye geodezii i kartografii (Main Administration of Geodesy and Cartography) spoke "On the Seven-year Plan for the Development of Topographic-geodetic and Cartographic Work". The following reports were delivered in the geodetic section: A. M. Faynzil'ber, Professor, "Some Integrals of the Surface Theorems and Their Application to the Mechanics of Artificial Satellites of the Earth".- A. V. Kondrashkov, Docent, "Radio-electronics and Geodesy".- G. V. Bagratuni, Docent, "Accuracy in the Solution of Inverse Position Computations by the Coordinates of Different Geodetic Systems".- P. P. Shokin, Docent, "Gravimetry in the Present Stage of Development".- Yu. V. Mokhov, Assistant, reported on the influence of rounding errors on the accuracy of solution of linear equation systems.- V. D. Bol'shakov, Candidate of Technical Sciences, spoke on the "Investigation of the Rules of Distribution of Errors in Generalizing the Relief in Surveys".- M. D. Drozdov, Post-graduate Student, reported on the solution of linear systems for the adjustment of geodetic networks.- V. M. Korolevtsev, Docent, demonstrated an apparatus designed by him for parallactic traversing with a short constant vertical basis.- The following reports were delivered in the aerophotogeodetic section: A. S. Yalnyex, Docent, reported on a parallactic reducer, an additional device to the stereo-comparator.- M. S. Veselovskiy, Docent, spoke on the possibility of generalizing the formulas for the air survey of outlines and altitudes.- B. N. Rodionov and N. P. Zakaznov, Docents, reported on a band-shaped central shutter for aerial cameras, B. N. Rodionov on a stroboscopic collimator sight, B. N. Rodionov and Engineer V. I. Yerkhov on the scheme of a computing device for the automatic entry of the airplane into the route for air surveys.- Ye. P. Arzhanov presented some simplifications for the computation of constants of aerial cameras.- Yu. N. Kuznetsov,

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Post-graduate Student, spoke on the use of rapid film recording for the investigation of aerial-camera shutters.- V. L. Grishin, Engineer of the Gectekhkontora Gosplana RSFSR, spoke "On Some Results and Tasks in the Execution of Large-scale Photo-theodolite Surveys".- The following reports were delivered in the cartographic section: Professor V. I. Sukhov spoke on the content of the new map on a scale of 1 : 2,500,000.- Professor A. I. Preobrazhenskiy spoke on "Mineral Resources of the USSR and Their Representation on Economic Maps".- S. S. Sudakova, Assistant, reported on the method of geographic field research during the preparatory editorial work at the object of cartography.- A. S. Tolstoukhov, Assistant, reported on the improvement of relief representation of wooded flat country on the topographic map on a scale of 1 : 10,000.- Yu. S. Bilich, Assistant, reported on maps of apartment building in the atlases of the oblast'.- In the section of building of apparatus, I. I. Men'shikov, Docent, spoke on the life of A. S. Popov.- N. V. Yakovlev, Assistant, reported on reflecting lenses, Professor I. G. Sarkin on the increase in accuracy in measuring physical magnitudes, Engineer V. M. Nazarov on vertical axial systems for highly accurate optic theodolites, V. S. Usov, Assistant, on sighting with telescopes with zone plates,

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P. P. Zakharov, Assistant, on the automatization of evaluation of image couples.

RODIONOV, B.N., kand.tekhn.nauk, dots.

Aerodynamic geometrical, and navigational principles underlying the automatic turn of the airplane on the surveying route. Trudy MIIGAIK no.34:79-128 '59. (MIRA 13:5)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii, kafedra aerofotos"yemki.
(Instrument flying) (Aerial photogrammetry)

3(4)

AUTHOR: Rodionov, B. N., Candidate of Technical Sciences

SOV/6-59-1-8/14

TITLE: Aerial Photographs of the Damming of the Volga at the Kuybyshev Hydroelectric Power Plant (Aerofotos"yemka perekrytiya Volgi na Kuybyshevskom gidrouzle)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 1, pp 45-48 (USSR)

ABSTRACT: The aerial photographs were taken during the damming of the Volga bed at the Kuybyshev water power plant in October 1955. A plan for the investigations in nature with their important part being aerial photographs was designed at the Gidroproyekt imeni Akademika S. Ya. Zhuka (Gidroproyekt imeni Academician S. Ya. Zhuk). The aerial photographs were printed on scales of from 1 : 5,000 to 1 : 500. The photographs were taken by the members of the summer photographers' field team of the Gidroproyekt by means of two YaK-12 airplanes and a MI-4 helicopter. One part of the program of aerial photography was the putting on record of the different building stages. For this purpose, an aerial survey on a scale of 1 : 2,000 of the area where the work was carried out was taken before the flooding of the building site, in the final stage of the

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Aerial Photographs of the Damming of the Volga at the Kuybyshev Hydroelectric Power Station SOV/6-59-1-8/14

opening of the coffer dams, after the filling up of the dam basis, and during the construction of the earth dam. The aerial photographs were decisive in the determination of the moment at which the uppermost coffer dam was open enough to start covering the bed of the Volga with tetrahedrons. The floating bridge was also photographed several times on a scale of 1 : 1000. A special operation was the aerial photograph for the determination of the directions and speeds of the water current behind the floating bridge and in narrow ditches. The photographs were taken from helicopters. The current speeds amounted to from 4 to 5 m/sec. - The costs of the aerial photographs amounted to 195,000 roubles.- Basing on this work it may be stated that the most useful airplane is the helicopter. The following cameras are the best for this purpose: AFA-TE-70 , AFA-TE-200 , AFA-33/50 . To increase the capacity it is necessary to use accelerated methods of film processing. The methods of developing by means of diffusion can be highly efficient.

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SOV/154-59-2-15/22

3(4)

AUTHOR: Rodionov, B. N., Docent, Candidate of Technical Sciences

TITLE: Questions Concerning the Automation of Aerial Photography (Voprosy avtomatizatsii aerofotos"yemki)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1959, Nr 2, pp 99-107 (USSR)

ABSTRACT: Aerial photography still requires the presence of an operator in the aircraft. To take a photograph without the presence of an operator, the following tasks must be carried out automatically: Changing of the film, determination and adjustment of the necessary intervals between exposures as well as the determination of the drifting angle and the corresponding movements (razvorot) of the aerial camera. Apart from this, it is necessary to have at one's disposal an automatic system for the control of the aerial camera and the auxiliary instruments, and a reliable system to fix their information synchronously with the taking of the photograph. The solution of this problem requires fundamental changes in the scheme of the aerial camera and in the automatic piloting of the plane whilst taking aerial pictures. The question of the plate holder with film-changing

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SOV/154-59-2-15/22

Questions Concerning the Automation of Aerial Photography

device is investigated first, and as a possible remedy the scheme of a camera with a separate plate holder is shown in figures 1 and 2. The plate holder can be placed on the floor or on the ceiling of the air plane. This scheme has been partly realized (without self-synchronization, gyroscopic stabilizing and photographic recording of the instruments) in the panoramic aerial camera of Perkin-Elmer (USA). The advantages of the shown scheme are listed. In order to make an aerial photograph without a pilot, it is necessary to carry out automatically the flying-in, the maintaining of the course and the determination of the moment when the aerial camera has to be switched on and off. The automatic navigational systems at present available are divided into those which are autonomous and those which are non-autonomous. The second group is not dealt with in this paper. The autonomous systems are divided into inertial systems and in Doppler-systems. The foreign publications are referred to and it is shown that it is possible, by combining a Doppler navigational instrument (based on the Doppler effect) and a radio altimeter, to create a computer and control device for the automatic determination of the interval between two ex-

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SOV/154-59-2-15/22

Questions Concerning the Automation of Aerial Photography

posures. The Doppler systems are for the time being the only ones, which enable the piloting of the plane entirely by instruments during the taking of aerial pictures.- The most complicated procedure in automation is the flying-in of the plane on the prescribed course. Apart from the high precision necessary for flying in on the course, the greatest difficulty is to keep up the shortest flying-in trajectory, which secures the best performance during photographing. The author is of the opinion that the automation of flying-in must be achieved by an automatic piloting device, which is controlled by a programming installation and a follow-up system. A block diagram of such an installation is shown in figure 3 and described. The pertinent formulas for calculation are also given. The achievement of electrical simulation does not cause difficulty. Therefore, only the most important block is here closer investigated, which gives the angle φ_1 of the steepest bank during the first turn. The formula for the determination of this angle, which has been developed at the Chair for Aerial Photography, is given and the following-up system for the solution of the

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Questions Concerning the Automation of Aerial Photography

transcendent equation for the angle φ'_1 (approximate angle during the banking-away) (otvorot) is shown in figure 5. Only the principles for the solution of the problem are given; the mathematical basis for the solution has been worked out and will be published in Nr 34 of the Trudy of the MIIGAiK. There are 5 figures.

ASSOCIATION: Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers)

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RODIONOV, B.N.

Use of helicopters in aerial photographic surveying.
Trudy Lab.aeromet. 7:74-77 '59. (MIRA 13:1)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki
i kartografii.
(Helicopters) (Aerial photogrammetry)

RODIONOV, B.N., kand. tekhn. nauk, dotsent

Computing device for solving the formula for setting out on an aerophotogrammetric strip. Izv. vys. ucheb. zav.; geod. i aerof. no.4:139-142 '63. (MIRA 17:9)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii.

RODIONOV, B.N., kand.tekhn.nauk, dotsent

AFA, the small aerial photographic camera of the Institute for Engineers in Geodesy, Aerial Photography, and Cartography. Trudy MIIGAIK no.45:9-11 '61. (MIRA 14:7)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii, kafedra aerofotos"yemki.
(Cameras) (Photography, Aerial)

RODIONOV, B.N., kand.tekhn.nauk, dotsent

Effect of physical conditions on the work of radio altimeters. (MIRA 14:9)
Trudy MIIGAIK no.42:35-51 '60.

1. Kafedra aerofotos"yemki Moskovskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii.
(Altimeter) (Radio in aeronautics)

S/537/61/000/045/001/001
A004/A101

AUTHOR: Rodionov, B. N., Docent, Candidate of Technical Sciences

TITLE: Small-size АФА - МИИГАиК (AFA-MIIGAiK) aerial camera

SOURCE: Moscow. Institut inzhenerov geodezii, aerofotos"yemki i kartografii
Trudy. no. 45. 1961, 9-11

TEXT: Starting with a brief enumeration of the advantages of small-size aerial cameras, the author describes the new AFA-MIIGAiK camera developed by the Aerial Photographic Survey Department of the Moskovskiy Institut inzhenerov geodezii, aerofotos"yemki i kartografii (Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography). He presents the following technical specifications: objective Руссар 25ИМ (Russar 25 IM); focal length - 20 mm; angle of objective field of vision - 122°; relative objective aperture - 1/7; resolving power of camera a) in the field center - 40 lines/mm, b) over the field - 15 lines/mm; type of aerial camera shutter - central; shutter exposure range - 1/60 - 1/200 sec; shutter efficiency - 80%; negative size - 51.5 x 70.0 mm; film employed - perforated 8 x 1,900 cm; number of photos - 320 - 340; take-up range of locality across the line of flight - 3.5 H (flight altitudes);

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